Moving from a Project-level to River Basin-level CIA: Trishuli River Case Study

January 2018
Trishuli River Basin

• Tributary to the Gandaki Basin
• ~32,000 sq. km. (approximately 10% in Tibet)
• ~40 hydropower projects proposed
• Why is the Trishuli Basin Important for Nepal?
  • Hydropower
  • Water
  • Rafting and Tourism
  • Local Recreation
  • Fisheries
  • Sand and Gravel
  • Religious/spiritual

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Upper Trishuli-1 Hydropower Project

- Proposed 216 MW run-of-river hydropower project

- Timeline
  - 2013 – Nepal EIA approved
  - 2015 – Supplementary Management Plans prepared to meet Lender requirements
  - 2015 – Earthquake
  - 2016/2017 – completed complementary studies
  - 2017/2018 – Updated ESIA to address post-earthquake changes, including CIA
Upper Trishuli-1 CIA

- Followed IFC CIA Guidelines six step process
Trishuli River Basin CIA

• Objectives

  • Establishing a truly multi-project, basin-level understanding of potential cumulative impacts in Trishuli Basin

  • Foster basin-wide, long-term collaboration in managing and monitoring environmental and social impacts and risks of ongoing development of multiple HPPs in the Trishuli Basin.

  • Design institutional and financial mechanisms to support joint management of common and cumulative environmental and social challenges, impacts and risks.
How do a Project-level and Basin-level CIA differ?

- Theoretically they should be the similar, but there are important differences:
  - CIA Process - broader and more inclusive
  - Step 1 - spatial and temporal boundaries may change
  - Step 2A - VECs may change
  - Step 2B - list of developments and stressors may broader
  - Step 3 – Baseline assessment may be more robust
  - Step 4/5 – assess magnitude and significance of VECs may be more robust
  - Step 6 – develop a more robust strategy, plan, and procedures for managing and monitoring impacts
CIA Process

- **Project-level** – typically involves talking with project-affected stakeholders, government, and key NGOs
- **Basin-level** – much broader, with Hydro Developer’s WG

**Proponents:** DoED, Ministry of Energy, MoPE

**Key Departments:** Health, Federal Affairs and Local Development, National Parks and Wildlife Conservation, Water and Energy Commission Secretariat (WECS), National Planning Commission

**Others:** IBN, OMCN

**Hydropower Developers**
- including NEA and private entities
- IPPAN: Independent Power Producers Association of Nepal
- District representatives of key departments (Dhading, Rasuwa and Nuwakote)
- Langtang National Park representatives

**Research Agencies:**
- IUCN, WWF, ICIMOD, US AID
- Conservation Agencies: Niti Foundation, JVS, Nepal Water Conservation Foundation
- NARA: Rafting Association
- Nepal Hydropower Journalists Association

**Gaon Palikas** within the spatial boundaries

**Rural Municipalities** (Uttaragya, Kalika, Parvatikund, Gosaikund etc)

**CFUGs:** Community Forest Users Group

**Representatives of Vulnerable Social Groups**

Local Labour Courts at district level
Step 1: Spatial and Temporal Boundaries

• Spatial boundaries
  • Project Level – Trishuli River Basin in Nepal
  • Basin Level – entire Trishuli River Basin, using available information for the portion in Tibet

• Temporal boundaries
  • Project Level – 10 years, while recognizing that the effects from cumulative impacts may 100 years or more
  • Basin Level – 50 years (typical hydro project life expectancy)
### Step 2A: Determine Developments/Stressors

<table>
<thead>
<tr>
<th>Project-Level</th>
<th>Tentative Basin-Level</th>
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<tbody>
<tr>
<td>Hydropower Projects</td>
<td>Hydropower Projects</td>
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<tr>
<td>Transmission Lines (limited)</td>
<td>Transmission Lines (expansive)</td>
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<td></td>
<td>One Belt One Road</td>
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<td>Chinese Rail Line</td>
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<td>Mining and Quarries</td>
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<td>Irrigation dams</td>
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<td>Solar farms</td>
<td>Downstream Industries</td>
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<td>Land Use</td>
<td>Land use</td>
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<td>Climate Change</td>
<td>Climate Change</td>
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<td>Earthquakes/Landslides</td>
<td>Earthquakes/Landslides</td>
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<td>Forest Fires</td>
<td>Forest Fires</td>
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### Step 2B: Determine VECs and Developments

<table>
<thead>
<tr>
<th>Project-Level</th>
<th>Tentative Basin-Level</th>
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<tbody>
<tr>
<td>Water Quality</td>
<td>Water Quality</td>
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<tr>
<td>Water Quantity (flow)</td>
<td>River Flow</td>
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<tr>
<td>Water Users</td>
<td>See “Livelihoods” below</td>
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<tr>
<td>Fish and Aquatic Habitat</td>
<td>Mahseer and Snow Trout</td>
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<td>Sediment Transport</td>
<td>Sediment Transport</td>
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<tr>
<td>Erosion/Landslides</td>
<td>Slope Stability</td>
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<tr>
<td>Terrestrial Habitat</td>
<td>Habitat Fragmentation</td>
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<td>Birds</td>
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<tr>
<td>Natural Resource Use</td>
<td>Livelihoods</td>
</tr>
<tr>
<td>Cultural and Religious Sites</td>
<td>Religious/Cremation Activities</td>
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<tr>
<td></td>
<td>Tourism/Pilgrimage</td>
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<td>Indigenous/Vulnerable Groups</td>
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</table>
Step 3: Baseline Assessment

- Able to gather more information because of broader stakeholder engagement and involvement
- Developer project survey

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<thead>
<tr>
<th>Species</th>
<th>IUCN Category</th>
<th>Distance</th>
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<tbody>
<tr>
<td>Tor putitora</td>
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<td>Neolissochilus hexagonolepis</td>
<td>NT M</td>
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<tr>
<td>Schizothorax richardsonii</td>
<td>VU M</td>
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<td>Labeo angra</td>
<td>LC M</td>
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<td>Labeo dero</td>
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<td>Schizothorax progastus</td>
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**Spawning Migration & Timing**

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Steps 4/5: Assess Impact Magnitude/Significance

• Assessment
  • Project-Level – primarily qualitative, primarily drawn from ESIA analysis
  • Basin-Level – semi-quantitative
    • DRIFT model to evaluate effects of flow on aquatic habitat
    • More detailed GIS analyses

• Project-level significant cumulative impacts
  • River flow
  • Fish and aquatics
  • Landslides
  • Recommends mitigation measures
  • Identifies need for collaboration among hydropower developers to effectively manage potential cumulative effects
Step 6: Develop Strategy to Manage Impacts

• IFC CIA Guidance recognizes the challenges in implementing management and mitigation measures for cumulative impacts

Since cumulative impacts typically result from the actions of multiple stakeholders, the responsibility for their management is collective, requiring individual actions to eliminate or minimize individual development’s contributions. At times, cumulative impacts could transcend a regional threshold and therefore collaboration in regional strategies may be necessary to prevent or effectively manage such impacts.

• Engaging more partners in the process, creates the potential for the management of cumulative impacts to evolve into a Joint Environmental Management Framework

  • Mechanisms to share burden of managing cumulative impacts
  • Environmental monitoring programs to validate whether management measures are working
Collaborative Framework for Delivery

• Prescribing joint delivery requires that there is an agreed platform or framework which supports that collaboration

• Collaborators may not only be project proponents but may also include:
  - Government
  - Affected and other stakeholders
  - Conservation groups
  - Expert groups

• Actions implemented under such a framework need to be targeted and specific to managing identified cumulative impacts

• Need to develop governance arrangements and specific objectives to be achieved through the intended collaboration
Example Joint EM Framework

Joint Environmental Management Framework

Committee Representatives

- Lead Agency & secretariat
  - Government
  - Developers
  - Civil Society
  - Affected Stakeholders
  - Expert Advisors

Responsibilities

- EMMP implementation
- Report on performance
- Data sharing, analysis, program evaluation
- Adaptive management

Technical advisory group – analyse data
Project Site Monitoring – provides data

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